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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,737	08/25/2003	Arvind D. Patel	05542/073001	2299

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EXAMINER	
FEELY, MICHAEL J	
ART UNIT	**PAPER NUMBER**
1796	

NOTIFICATION DATE	DELIVERY MODE
07/15/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/647,737	PATEL ET AL.	
	Examiner	Art Unit	
	Michael J. Feely	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claim 21 is pending.

Response to Amendment

1. The rejection of claims 22 and 23 under 35 U.S.C. 102(e) as being anticipated by Thompson et al. (US 2004/0102332) has been rendered moot by the cancellation of these claims.

2. The rejection of claims 22-24 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Clapper et al. (US Pat. No. 4,663,076) has been rendered moot by the cancellation of these claims.

3. The rejection of claims 22-24 under 35 U.S.C. 103(a) as being unpatentable over Coates et al. (US Pat. No. 4,941,983) has been rendered moot by the cancellation of these claims.

4. The rejection of claim 24 under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 2004/0102332) has been rendered moot by the cancellation of this claim.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. The rejection of claim 21 under 35 U.S.C. 103(a) as being unpatentable over Coates et al. (US Pat. No. 4,941,983) stands.

Regarding claim 21, Coates et al. disclose: ***(21)*** a drilling fluid (Abstract; column 2, lines 5-7) comprising:

(A) an oleaginous fluid (Example 1: column 8, lines 9-10; column 2, lines 8-15), wherein the oleaginous fluid is the continuous phase of the drilling fluid (Example 1: column 8, lines 9-10; column 2, lines 8-15) and wherein the oleaginous fluid comprises from about 30% to about 95% by volume of the drilling fluid (Example 1: column 8, lines 9-10; column 2, lines 8-15) and the oleaginous fluid of a material selected from the group consisting diesel oil, mineral oil, synthetic oil, esters, ethers, acetals, di-alkylcarbonates, olefins, and combinations thereof (column 6, lines 45-50);

(B) a non-oleaginous fluid (Example 1: column 8, lines 9-10; column 2, lines 8-15), wherein the non-oleaginous fluid is the discontinuous phase of the drilling fluid (Example 1: column 8, lines 9-10; column 2, lines 8-15), wherein the non-oleaginous fluid comprising from about 1% to about 70% by volume of said drilling fluid (Example 1: column 8, lines 9-10; column 2, lines 8-15) and the non-oleaginous fluid is selected from the group consisting of fresh water, sea water, a brine containing organic or inorganic dissolved salts, a liquid containing water-miscible organic compound, and combinations thereof (Example 1: column 8, lines 9-10; column 2, lines 8-15);

(C) an organophillic clay (Example 1: column 8, line 10);

(D) a primary emulsifier selected from an amidoamine and/or an oleate ester (Example 1: column 7, line 49 through column 8, line 2; column 3, line 47 through column 4, line 12), wherein the primary emulsifier is in sufficient concentration to stabilize the invert emulsion (Example 1: column 7, line 49 through column 8, line 7);

(E) a weighting agent (Example 1: column 8, line 11), wherein the weighting agent or bridging agent is selected from the group consisting of galena, hematite, magnetite, iron oxides,

illumenite, barite, siderite, selstite, dolomite, calcite and combinations thereof (column 8, line 11); and

(F) a rheology modifier (Example 1: column 8, lines 3-7 & 17-22), wherein the rheology modifier is a mixture of C_{12} to C_{22} polycarboxylic fatty acids (Example 1: column 8, lines 3-7 & 17-22), including at least a dimer poly-carboxylic C_{12} to C_{22} fatty acid (Example 1: column 8, lines 3-7 & 17-22), and a trimer poly-carboxylic C_{12} to C_{12} fatty acid (Example 1: column 8, lines 3-7 & 17-22), wherein the mixture of polycarboxylic fatty acids is added in sufficient concentration so that the fatty acid concentration in the drilling fluid is greater than 0.1 pounds per barrel and is up to 5.0 pounds per barrel (Example 1: column 8, lines 3-7 & 17-22);

Coates et al. discloses the use of organophillic clay as viscosifier/rheology modifier *(see Example 1)*; however, they fail to explicitly disclose: ***(21)*** wherein the organophillic clay is present in a concentration of about 0.1% to about to about 6% by weight.

The label of viscosifier/rheology modifier establishes that the amount of organophillic clay in this type of composition is a result-effective variable, where a proper amount is required to modify viscosity, as desired. In light of this, it has been found that, "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," –*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

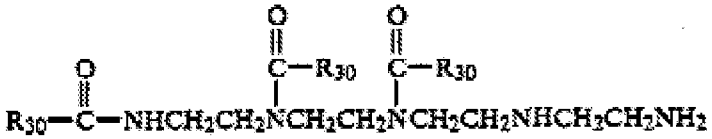
Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the amount of organophillic clay in the composition of Coates et al. because Coates et al. label the organophillic clay as a viscosifier/rheology modifier. This label establishes that the amount of organophillic clay in this type of composition is a result-effective variable, where a proper amount is required to modify viscosity, as desired.

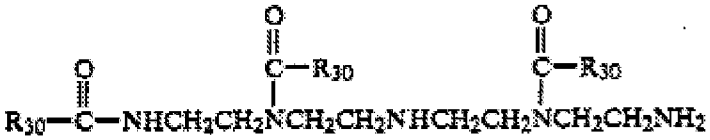
Response to Arguments

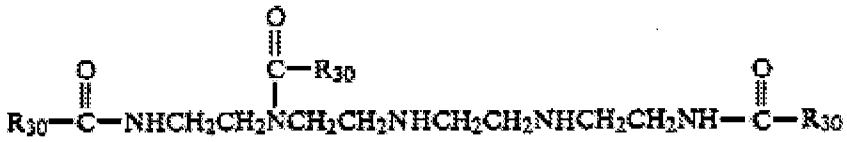
7. Applicant's arguments filed April 29, 2010 have been fully considered but they are not persuasive.

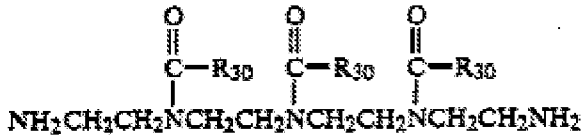
Regarding the teachings of Coates et al., Applicant contends that Coates et al. do not teach a primary emulsifier *selected from an amidoamine and/or an oleate ester*, as required by independent claim 21 *(see pages 5-7 of the response)*. Specifically, they contend that the amide-amine (iia) loses its identity as an amido-amine once it is reacted with the *(carboxyl-functional)* lignite.

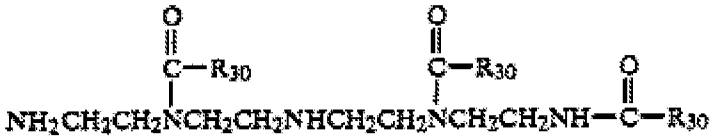
In the cited Example of Coates et al., a 3:1 amide of crude oleic acid and tetraethylene pentamine is produced. This amide *(amido-amine)* would feature three amide groups and two *(primary or secondary)* amine groups, *similar* to compound VII disclosed by Coates et al. *(see column 4)*. The amido-amine would be represented by one or a combination the following structures:

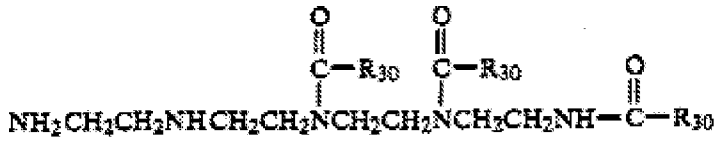












These amido-amine materials are then reacted with carboxyl-functional lignite microparticles. One would expect the carboxyl groups of the lignite to react with the terminal primary amine groups of the amido-amine. These primary amine groups would become amide groups; however, one would expect the secondary amine groups in the main chain to remain. Accordingly, the lignite/amido-amine reaction product would have: (a) maintained its identity as an amido-amine, featuring both amide and amine groups; and (b) represented a *modified* amido-amine material. Furthermore, one would expect this material to feature emulsifying capabilities because of its amido-amine nature, having both amide and amine groups.

Discussion of Prior Art/Suggested Claim Language

8. The teachings of Coates et al. have been closely reviewed in comparison to the instant invention. The following is a material breakdown of the cited Example of Coates et al.

Fluid Loss Additive of Coates: 80 parts (a) + 20 parts (b)

Part (a): 48.25 g of reaction mixture + 1.75 g bentonite clay

Reaction Mixture of (a)

Material	grams	wt%
amido-amine	49.50	20.57
diesel oil	135.00	56.09
lignite	46.80	19.44
water	9.40	3.91
total	240.70	100.00

Reaction Mixture of (a) on a 48.25g basis

Material	grams
amido-amine	9.92
diesel oil	27.06
lignite	9.38
water	1.88
total	48.25

Overall Part (a)

Material	grams	wt%
amido-amine	9.92	19.85
diesel oil	27.06	54.12
lignite	9.38	18.76
water	1.88	3.77
bentonite clay	1.75	3.50
total	50.00	100.00

Part (a) on a 80 parts basis

Material	wt%	parts
amido-amine	19.85	15.88
diesel oil	54.12	43.30
lignite	18.76	15.01
water	3.77	3.01
bentonite clay	3.50	2.80
total	100.00	80.00

Part (b): 50% DIMA + 50% DIMB

DIMA

fatty acid	wt%
mono	<10
dimer	20-30
trimer	60-70
total	100

DIMB

	wt%
mono	20-40
dimer	60-80
total	100

Overall Part (b)

	fatty acid	wt%
(DIMA)	mono	<5
(DIMA)	dimer	10-15
(DIMA)	trimer	30-35
(DIMB)	mono	10-20
(DIMB)	dimer	30-40
	total	100

Part (b) on a 20 parts basis

	fatty acid	parts
(DIMA)	mono	<1
(DIMA)	dimer	2-3
(DIMA)	trimer	6-7
(DIMB)	mono	2-4
(DIMB)	dimer	6-8
	total	20

In this cited Example, the fluid loss additive is added to the invert mud at a concentration of 4 ppb. Furthermore, the general teachings of Coates et al. disclose a concentration range of 1 to 20 ppb *(see column 6, lines 60-62)*.

The following is a material breakdown at various concentrations contemplated by Coates et al.:

			Pounds Per Barrel				
Total Fluid Loss Addive (100 parts basis)			**4**	**8**	**12**	**16**	**20**
Material	parts	wt%					
amido-amine	15.88	15.88	**0.64**	**1.27**	**1.91**	**2.54**	**3.18**
diesel oil	43.30	43.30	1.73	3.46	5.20	6.93	8.66
lignite	15.01	15.01	**0.60**	**1.20**	**1.80**	**2.40**	**3.00**
water	3.01	3.01	0.12	0.24	0.36	0.48	0.60
bentonite clay	2.80	2.80	0.11	0.22	0.34	0.45	0.56
DIMA mono (ave value)	1.00	1.00	0.04	0.08	0.12	0.16	0.20
DIMA dimer (ave value)	2.50	2.50	0.10	0.20	0.30	0.40	0.50
DIMA trimer (ave value)	6.50	6.50	0.26	0.52	0.78	1.04	1.30
DIMB mono (ave value)	3.00	3.00	0.12	0.24	0.36	0.48	0.60
DIMB dimer (ave value)	7.00	7.00	0.28	0.56	0.84	1.12	1.40
total	100.00	100.00	4.00	8.00	12.00	16.00	20.00
lignite/amido-amine product			**1.24**	**2.47**	**3.71**	**4.94**	**6.18**

Accordingly, the max concentration of amido-amine appears to be approximately 6 ppb. In light of this, it appears that Applicant's exemplary embodiment would be patentably distinct from Coates et al. This exemplary embodiment features: (1) an amidoamine as a primary emulsifier provided in a concentration of 7-8 ppb, and (2) an oleic acid based wetting agent as a secondary emulsifier provided in a concentration of 1-2 ppb.

The following is suggested claim language:

21. (Proposed Amendment) A drilling fluid comprising:

an oleaginous fluid, wherein the oleaginous fluid is the continuous phase of the drilling fluid and wherein the oleaginous fluid comprises from about 30% to about 95% by volume of the drilling fluid and the oleaginous fluid of a material selected from a group consisting of diesel oil, mineral oil, synthetic oil, esters, ethers, acetals, di-alkylcarbonates, olefins, and combinations thereof;

a non-oleaginous fluid, wherein the non-oleaginous fluid is the discontinuous phase

of the drilling fluid, wherein the non-oleaginous fluid comprises from about 5% to about 70% by volume of said drilling fluid and the non-oleaginous fluid is selected from the group consisting of fresh water, sea water, a brine containing organic or inorganic dissolved salts, a liquid containing water-miscible organic compounds, and combinations thereof;

an organophillic clay, wherein the organophillic clay is present in a concentration of about 0.1% to about 6% by weight;

a primary emulsifier ~~selected from an amidoamine and/or an oleate ester~~, wherein the primary emulsifier is an amidoamine and is present in ~~sufficient~~ a concentration of 7 to 8 pounds per barrel ~~to stabilize the invert emulsion~~;

a secondary emulsifier, wherein the secondary emulsifier is an oleic acid based wetting agent and is present in a concentration of 1 to 2 pounds per barrel;

a weighting agent, wherein the weighting agent or bridging agent is selected from the group consisting of galena, hematite, magnetite, iron oxides, illmenite, barite, siderite, celestite, dolomite, calcite and combinations thereof; and

a rheology modifier, wherein the rheology modifier is a mixture of C_{12} to C_{22} poly-carboxylic fatty acids, including at least a dimer poly-carboxylic C_{12} to C_{22} fatty acid, and a trimer poly-carboxylic C_{12} to C_{22} fatty acid, wherein the mixture of poly-carboxylic fatty acids is added in sufficient concentration so that the trimeric poly-carboxylic fatty acid concentration in the drilling fluid is greater than 0.1 pounds per barrel and is up to 5.0 pounds per barrel.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/
Primary Examiner, Art Unit 1796

July 9, 2010